

Remarks/Arguments:

Claims 11, 13, 19, 21, 23, 25-31 and 35-37 have been amended. No new matter is introduced herein. Of pending claims 10-23, 25-63, 65 and 66, claims 10, 12, 14, 16, 17, 20, 22, 38-63, 65 and 66 have been withdrawn.

Claims 11, 23-26 and 35-37 have been amended to clarify the language. Claims 11, 23, 25, 26, 36 and 37 have been amended to clarify that color correction is applied to a pixel by forming a) a first corrected chrominance signal to increase saturation of a chrominance signal by decreasing a value of the chrominance signal and b) a second corrected chrominance signal to increase a white color component of the chrominance signal by increasing the value of the chrominance signal.

Claims 11, 23 and 25 have also been amended to clarify that a saturation height difference is generated for adjacent pixels in a region by assigning each of the first and second corrected chrominance signals to the pixels of the region according to a predetermined assignment pattern. Claims 26, 36 and 37 have also been amended to clarify that color correction control is performed so that each of the first and second corrected chrominance signals are alternately displayed in a predetermined size of pixel units over a predetermined region. No new matter is introduced herein. Basis for the amendments can be found, for example, at paragraphs [0090-0095]; paragraph [0098]; paragraph [0108-0110]; paragraph [0184]; paragraphs [0206-0212] and Figs 1, 3, 7 and 8 of the subject specification.

The specification has been objected to as failing to provide proper antecedent basis for the claimed subject matter. In particular, the term "computer usable medium," recited in claims 25 and 37 is objected to because it "does not appear in the specification." Claims 25 and 37 have been amended to recite a "computer readable medium." Support for this feature is found at paragraph [0600] of the subject specification. Accordingly, Applicants respectfully request that the objection to the specification be withdrawn.

Claims 11, 25, 26 and 37 have been objected to as including grammatical and typographical errors. Claims 11, 25, 26 and 37 have been amended accordingly. Applicants respectfully request that the objection to claims 11, 25, 26 and 37 be withdrawn.

Claims 11, 19, 23, 25, 28, 29 and 31 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In particular, it is asserted that these claims include

grammatical and idiomatic errors and lack sufficient antecedent basis. Claims 11, 19, 23, 25, 28, 29 and 31 have been amended to clarify the language and for antecedent basis. Accordingly, Applicants respectfully request that the rejection of these claims under 35 U.S.C. §112, second paragraph be withdrawn.

Claims 23 and 36 have been rejected under 35 U.S.C. §101 as not falling within one of the four statutory categories of invention. Claims 23 and 36 have been amended to recite that the display step displays the pixels (chrominance signal) on a display instrument. Applicants also note that claim 36 is directed to a display method using a display apparatus (i.e. another statutory category). Accordingly, claims 23 and 36, as amended, are tied to another statutory category. Applicants respectfully request that the rejection of claims 23 and 36 under 35 U.S.C. §101 be withdrawn.

Claims 25 and 37 have been rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. In particular, it is asserted that the phrase "computer usable medium" represents non-statutory matter. Claims 25 and 37 have been amended to recite a "computer readable medium including computer program instructions which are configured to cause a computer to perform." Accordingly, Applicants respectfully request that the rejection of claims 25 and 37 under 35 U.S.C. §101 be withdrawn.

Claims 11, 15, 18, 23, 25, 26, 31, 33, 34, 36 and 37 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Gruzdev et al. (U.S. 6,868,179) in view of Higgins (U.S. 7,176,935). It is respectfully submitted, however, that these claims are patentable over the cited art for the reasons set forth below.

Claim 11, as amended, includes features neither disclosed nor suggested by the cited art, namely:

... a color correction instrument which applies ... each of a) a first color correction of increasing saturation of at least one of said chrominance signals by decreasing a value of the at least one of said chrominance signals to form a first corrected chrominance signal and b) a second color correction of increasing the white color component of the at least one of said chrominance signals by increasing the value of the at least one of said chrominance signals to form a second corrected chrominance signal, when a predetermined color component is detected ...

... a height generation instrument which generates, when a region of adjacent pixels having said predetermined color component is detected, a saturation height difference for the pixels in said region by assigning each of said first corrected chrominance signal and said second corrected chrominance signal to the pixels of said region according to a predetermined assignment pattern, the predetermined assignment pattern alternating said first and second corrected chrominance signals over one or more of said pixels ... (Emphasis Added)

Claims 23 and 25 include similar recitations.

Gruzdev et al. disclose a method of correcting image saturation in a chromaticity color space. Saturated colors are defined and an overall correction of the saturation of colors in the image is performed using a table of corrections. (Abstract). An optimal saturation is defined using an average color ratio, R, for all colors in a high saturation region. (Col. 6, line 62 - Col. 7, line 37). Gruzdev et al. also teach using different color tables for "normal" colors and for predetermined color ranges (e.g., sky colors, grass colors, skintone colors, etc.). (Col. 7, line 60 - Col. 8, line 17).

Gruzdev et al., however, do not disclose or suggest a color correction instrument that forms each of a) a first corrected chrominance signal to increase saturation of a chrominance signal by decreasing a value of the chrominance signal and b) a second corrected chrominance signal to increase a white color component of the chrominance signal by increasing the value of the chrominance signal, as required by claim 11 (emphasis added). In addition, Gruzdev et al. do not disclose or suggest a height generation instrument which generates a saturation height difference for adjacent pixels in a region by assigning each of the first and second corrected chrominance signals to the pixels of the region according to a predetermined assignment pattern, as required by claim 11 (emphasis added). Gruzdev et al. are silent regarding these features. Gruzdev et al. only teach applying an average color ratio correction for colors in a high saturation region using a table. Finally, as acknowledged by the Examiner on page 6 of the Office Action, Gruzdev et al. do not disclose or suggest a display apparatus which receives chrominance signals and includes pixels configured to display four colors, as required by claim 11. Accordingly, Gruzdev et al. do not include all of the features of claim 11.

Higgins discloses, in Fig. 1, system 100 that provides gamut expansion and/or conversion of chroma components. (Col. 5, lines 18-47). Higgins, however, does not disclose

or suggest a color correction instrument for forming each of first and second corrected chrominance signals and a height generation instrument which generates a saturation height difference for adjacent pixels in a region by assigning the first and second corrected chrominance signals to the pixels according to a predetermined assignment pattern, as required by claim 11. Higgins is silent regarding these features. Thus, Higgins does not make up for the deficiencies of Gruzdev et al. Accordingly, allowance of claim 11 is respectfully requested.

Although not identical to claim 11, claims 23 and 25 include features similar to claim 11. Accordingly, allowance of claims 23 and 25 is respectfully requested for at least the same reasons as claim 11.

Claims 15 and 18 include all of the features of claim 11 from which they depend. Accordingly, claims 15 and 18 are also patentable over the cited art.

Claims 26, 36 and 37, although not identical to claim 11 include features similar to claim 11 which are neither disclosed nor suggested by the cited art. Namely, forming each of a) a first corrected chrominance signal to increase saturation of a chrominance signal by decreasing a value of the chrominance signal and b) a second corrected chrominance signal to increase a white color component in the chrominance signal by increasing the value of the chrominance signal. As described above, these features are neither disclosed nor suggested by the cited art. In addition, claims 26, 36 and 37 also include the feature of performing control of color correction so that each of the first and second corrected chrominance signals are alternately displayed in a predetermined size of plural units over a predetermined region. Neither Gruzdev et al., Higgins, nor their combination disclose or suggest these features. Accordingly, allowance of claims 26, 36 and 37 is respectfully requested.

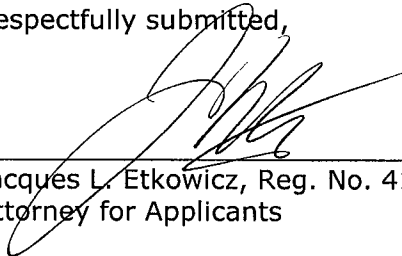
Claims 31, 33 and 34 include all of the features of claim 26 from which they depend. Accordingly, claims 31, 33 and 34 are also patentable over the cited art.

Claims 13, 19, 21, 27-30, 32 and 35 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Gruzdev et al. in view of Higgins and further in view of Okada et al. (U.S. 6,766,052). These claims, however, include all of the features of respective claims 11 and 26 from which they depend. Okada et al. do not make up for the deficiencies of Gruzdev et al. and Higgins because they do not disclose or suggest forming each of first and second corrected chrominance signal (as required by claims 11 and 26); generating a saturation height

difference for adjacent pixels in a region by assigning each of the first and second corrected chrominance signals to the pixels according to a predetermined assignment pattern (as required by claim 11); or controlling color correction so that each of the first and second corrected chrominance signals are alternately displayed in a predetermined size of pixel units (as required by claim 26). Accordingly, claims 13, 19, 21, 27-30, 32 and 35 are also patentable over the cited art for at least the same reasons as respective claims 11 and 26.

In view of the foregoing amendments and remarks, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,



Jacques L. Etkowicz, Reg. No. 41,738
Attorney for Applicants

DMG/so

Dated: April 21, 2009

P.O. Box 980
Valley Forge, PA 19482
(610) 407-0700

DMW/398853